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Appl. No. 10/531,191
Amdt. dated March 1, 2007
Reply to Office Action of October 6, 2006

Remarks

The present amendment responds to the Official Action dated October 6, 2006. A petition for a two month extension of the time to respond and authorization to charge Deposit Account No. 50-1058 the large entity fee of \$450 for this extension accompany this amendment. The Official Action objected to claims 4 and 5 under 37 CFR 1.75(c) as being improper multiple dependent claims. Claims 1-5 were rejected under 35 U.S.C. 103(a) over Kohzaki et al. U.S. Patent Publication 2002/0182497 (Kohzaki) in view of Armand et al U.S. Patent Publication No. 2004/0033360 (Armand). These grounds of rejection are addressed below. Claims 1 and 2 have been amended to be more clear and distinct. Claims 3-5 have been amended to address the multiple dependency issue. New claims 6 and 7 have been added toward the same end. Claims 1-7 are presently pending.

37 CFR 1.75(c) Objection

This objection has been addressed as follows. Claim 3 has been amended to depend solely from claim 1 and a new claim 6 reading the same as claim 3 but dependent upon claim 2 has been added. Claims 4 and 5 have been rewritten to depend from "any one of claims 1 to 3 or 6". New claim 7 reading the same as claim 5 but dependent solely upon claim 4 has been added.

The Art Rejections

As addressed in greater detail below, Kohzaki and Armand do not support the Official Action's reading of them and the rejections based thereupon should be reconsidered and withdrawn. Further, the Applicants do not acquiesce in the analysis of Kohzaki and Armand

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made by the Official Action and respectfully traverse the Official Action's analysis underlying its rejections.

Turning to the relied upon art, Kohzaki discloses a process for producing LiFePO_4 including the steps of mixing a lithium source, an iron compound and a phosphate source, and calcining the mixture at a temperature from 600 to 750 °C.

However, Kohzaki does not at all disclose "causing metal iron to '**dissolve**' in an acidic solution", which is disclosed and claimed by the present invention. Kohzaki merely discloses the use of an "iron compound" ($\text{FeC}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$ in an embodiment) as an iron source. It does not teach and does not make obvious the claimed use of "metal iron" as a raw material as in claims 1 and 2 as presently amended.

Paragraph 0006 of the specification of Kohzaki states that "iron is abundant as the resource" and "less expensive." However, this statement in Kohzaki is made merely in a general context, that iron is abundant and less expensive than the cobalt, which is used in lithium secondary batteries using LiCoO_2 . Kohzaki appears to only describe the use of an "iron compound" as an iron source. Kohzaki does not teach and does not suggest the use of metal iron, or the use of the dissolved form of metal iron by reaction with acid.

In addition, Kohzaki discloses the use of LiFePO_4 as a cathode material, and does not disclose the use of FePO_4 or a process for producing FePO_4 .

Armand describes grinding a mixture in water using a ball mill. However, this disclosure merely relates to grinding a solid mixture. Armand does not disclose and does not suggest reacting a compound which releases phosphate ions in a solution with metal iron while grinding

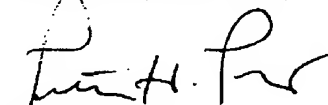
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the compound and the metal iron in an aqueous solution to renew surfaces of the metal iron, in other words, accelerating the reaction of the metal iron by grinding the mixture to renew the surfaces of the metal iron. Thus, Armand does not cure the deficiencies of Kohzaki as a reference with respect to the presently amended claims, and Kohzaki and Armand taken in combination do not make these claims obvious.

Conclusion

All of the presently pending claims, as amended, appearing to define over the applied references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted,



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